

REMARKS

This amendment is responsive to the Office Action dated April 28, 1999. Claims 1-13 are pending in the present application. Claims 1, 8, 11 and 13 have been amended, and claim 10 has been canceled. Claims 1-9 and 11-13 remain pending.

Applicant's Attorney thanks Examiner Harrington for the Interview on June 28, 1999. The amendments and remainder of the remarks incorporate the substance of the interview. This amendment is submitted in accordance with Rule 116 in an earnest effort to put the application in better condition for allowance. It is believed that the amendment has not amended the claims in a way that would raise new issues for consideration or that would require further searching of the prior art on the part of the Examiner.

Independent claims 1, 8, and 13 have been amended to more clearly recite subject matter of the invention. The claims now make clear that no mark information is stored with the image data, and that the mark and group manipulation functions are performed within the digital camera. The limitations from canceled claim 10 have been incorporated into independent claim 8, and claim 11 has been amended to depend from claim 9.

The present invention provides a digital camera interface that includes a "mark" function for allowing a user mark a series of selected images to create a temporary group of images for collective manipulation. After marking the selected images, the user may perform functions on the group, such as deleting the group, or transforming the temporary group into a permanent group of images. This is contrast to conventional digital cameras in which operations had to be performed on a single image at time. In a preferred embodiment, the functions that can be applied to the group are provided

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using soft keys, which are programmable buttons that change function according to the state of the camera.

Claims 1-3, 6-11, and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. (US Patent 5,633,678) (hereinafter "Parulski") in view of Steinberg (US 5,862,218). The Examiner stated:

Regarding claim 1, Parulski et al discloses an electronic camera which captures and assigns a tag (claimed "mark") to a plurality of images taken (column 2, lines 1-5). Once all the images are tagged (claimed "repeating step (a)"), the images are saved (claimed "one group function") to the storage (column 2, lines 58-65) ... Although Parulski et al.'s system uses a "pre-capture tag system" for saving images, it would have been obvious to use a "post-captured tag" system, since it is known in the art to use such a system...However, Parulski et al fails to specifically disclose creating a temporary group of marked images...In the same field of endeavor, Steinberg discloses a camera system in which viewable indicators/marks are attached to images temporarily...

Applicant respectfully disagrees. In contrast to the present invention, both Parulski and Steinberg teach cameras that are to be used with a host computer, and wherein additional information is stored with the image data.

Parulski teaches a camera that provides the user with the ability to categorize still digital images according to subject matter by "tagging images" both pre- and post-capture. Once an image is tagged, the category name is stored along with the image data in the image file. When the images are subsequently downloaded to the host computer, the user can select a category to download and the images can be stored in folders labeled with each category name (see for example, Col. 2, lines 17-20 and lines 51-65).

Steinberg provides a method for verifying the authenticity of an image captured by a digital camera. An indicium and a password are first created on a host computer and downloaded into the camera. The camera then acquires an image and marks it during the acquisition process by modifying the image data with the indicium and

creating authentication data. The process of marking and creating authentication data all occur during acquisition and the authentication data is stored along with the marked image data for subsequent transmission to the host computer. Once the marked image is downloaded to the host computer, the authentication data is compared with corresponding data of a questionable second image to determine if they are the same (Abstract).

In contrast, the claims of the present invention are directed to group manipulation of images "within a digital camera", rather than a computer, as recited in the amended claims. In addition, the amended claims now make clear that after a user marks a series of images to create a temporary group of marked images, the "mark information is not stored with the images." In Parulski, the category information is stored permanently with the image data and in Steinberger, the indicium is stored with the image data. In the present invention, by contrast, repeatedly marking images creates a "temporary group of marked images". No record that an image has been marked is kept with the image, thus reducing storage requirements.

It is also helpful to examine the problem faced by the inventor when determining obviousness. The problem faced by the inventor in the present application was how to enable a non computer-literate user of a digital camera a way to manipulate images as group, rather than one at a time, on a device lacking standard user interface tools, such as a keyboard. Examples of such group manipulation include deleting each image in the group, saving each image in the group into the same directory, or in the same file to create a slide show, duplicate each image in group, or automatically viewing each image in the group.

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It is respectfully submitted that the references teaches away from providing such complex group image manipulation within a digital camera. Parulski requires that category names first be entered on a host computer and then downloaded into the camera. Parulski states that "the tagging feature functioned more as a "post-capture data gatekeeper" than as a useful tool for image handling. *Anything more complex in the way of data organization requires ... the use of a special application program in the host computer to organize and sort the image data (Col. 2, lines 20-25) (emphasis added).*

Likewise, Steinberger teaches that the indicium is first created on the host computer and downloaded into the camera. And the entire purpose of Steinberger, image authentication, isn't performed "within the camera", but must be done on the host computer after image acquisition and marking. Moreover, Steinberger teaches that the image marking is performed by the camera during image acquisition.

As recited in the amended present invention, by contrast, both the marking and the group manipulation of the images is performed entirely within the camera, at the direction of the user. What's more, the references fail to teach or suggest "providing the digital camera with "one or more function keys", and "assigning a mark function to one of the function keys...and assigning at least one group function to one of the function keys", as recited in the independent claims 1, 8 and 13. Rather, as stated previously, Parulski teaches that such a combination of features could not be done on the camera itself, but would require a host computer.

It is respectfully submitted that due to the differences between marking and categorization, Parulski cannot be relied upon as a primary reference to establish obviousness.

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As pointed out in the last Amendment, Parulski's categorization inherently relate images by subject matter. This is a too restrictive approach for performing group manipulation functions as claimed in the present invention because a user may want to perform a function on a group of images that have no relation what so ever. For example, a user may want to delete, save, or play the group of disparate images. Marking provides such functionality, while subject-based categorization does not.

The difference between marking and categorization can best be illustrated by the following example. In the future, digital cameras will be equipped with mass storage devices capable of storing hundreds or thousands of images. With that many images, users may use Parulski's invention to place the images into many different categories for quick searching capability. Now assume the use would like to display or delete all the images from 20 of the different categories. Using prior art techniques, the user would have to select the first category and press delete, select the second category and press delete, and so on 18 more times. The claims of the present invention solve the problem directly. The user would select each category and press the "mark" key to create a temporary group of categories, and then press the delete key to delete the group.

Thus, Parulski in combination with the other references would still suffer the drawback that the present invention eliminates; creating a temporary group of images in a digital camera for collective manipulation by the user.

In view of the foregoing, it is submitted that independent claims 1, 8 and 13 are allowable over the cited references. Because the secondary references stand or fall with the primary references, claims 2-7 and 9-12 are allowable because they are

dependent upon the allowable independent claims. Accordingly, Applicant respectfully requests reconsideration and passage to issue of claims 1-13 as now presented.

Applicants' attorney believes that this Application is in condition for allowance. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,



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